NUTRITIONAL STATUS OF SCHOOL CHILDREN AND UNDERFIVE CHILDREN OF MOUNTAINOUS AREA OF MALANG, EAST JAVA, INDONESIA

By
Adi Heru Sutomo
Public Health Department of Medical Faculty of Gadjah Mada University,
Yogyakarta, Java, Indonesia

ABSTRACT

A Simple research on the relationship between health and environment in East Java was done, and actually its result is surprisingly. In Indonesia, especially in mountainous areas of east Java and Central Java there are many cases of Iodine Deficiency Diseases (IDD) where it can be recognised using their performances for instance : nect swollen, cretinism (short in body), and malnutrition .

The result of this research giving a short recommendation to do a deeper study and to do an action or treatment on IDD in its relation especially to school children and under five children who live in mountainous areas .

Key word : Iodine - Mountain - Health - Environment

INTRODUCTION

Based on the understanding that generally mountainous areas have a high risk to have a low level of Iodine content in its soil, then we are trying to do a small research in its relation to the people health status, especially in the context of school children and underfive children who are living in the mountainous areas .

Due to the low level of Iodine in the soil, then grass, coconut, paddy, corn, papaya, banana, and many other plants have also low level of Iodine content. As a result, chicken, beef, egg ,and many other meats have also low level of Iodine content.

Delange (1994) report that IDD theoretically preventable, but these disorder still prevail in the world because of various socioeconomic, cultural and political limitations to adequate programs of Iodine supplementation .

IDD areas usually are mountainous, because, the soil lowest in Iodine were covered longest by the quartenary glaciers. When the glaciers melted that staple food from the third world such as cassava, maize, bamboo, shoots, sweet potatoes, lima beans and millets contain cyanogenic glucosides which are capable of liberating large quantities of cyanide by hidrolisis.

Matulessy et. al. (1993) reports that in Indonesia the endemic goitre prevalence is still very high, but varies with the areas about 30 million people are suffer from Iodine deficiency. Urban areas in the endemic population like east Java and central Java face a high prevalence of Iodine deficiency, while urban areas like Jakarta and west Java seem to have no problem with Iodine deficiency.

METHOD AND MATERIAL

Data was collected from secondary data source of Malang Regency of east Java Province of Indonesia, For example library books, District Health centre office, and village office. Especially for the rural areas, we took a look two villages which have different kind of water availability and other sosial - economic condition .

Analysis was done in March 2000, and the discussion was run comprehensivelly in the Public Health Departement of Gadjah Mada University .

RESULT AND DISCUSSION

Table . Rural Description of IDD in Sumber Manjing Wetan District of Malang Regency

District of Sumber Manjing Wetan	Total Goitre Rate (Respondent are not mentioned)
Sumber Agung Village	96.15%
Tambak Asri village	72.40 %
Siti Arjo Village	58.41%

Source : Sumber Manjing Wetan District Health Centre, 1994.

The above data shows that in Sumber Manjing Wetan District centre the number of IDD is quite high, and Sumber Agung village is the highest, and then followed by Tambak Asri village and Siti Arjo villages.

Tambak Asri village is an area where water availability is very less, and it is very different from karang sari where water availability is so many.

In tambak Asri, people's social - economic condition is quite high.

Table 2. Rural Description of IDD of Karang Sari village of Wonokerto district health centre, Malang Regency

Sample	Number of Sample	Total Goitre Rate	Visible Goitre Rate
School Children	30	83.33%	33.33%
Pregnant mother	30	86.67%	43.33%

Source : Wonokerto District health centre, 1994

Table 1 and table 2 shows that both of the two villages :
Tambak Asri and Karang Sari have a quite high number of IDD cases.
Based on TGR (Total Goitre Rate) number, Tambak Asri is a litle bit higher than Karang Sari.

Table 3. Urban Description of IDD among school children in Merjosari village of Malang city centre in 1994

Primary School	Number of students palpated	Number of students got IDD	IDD procentation
SD Merjosari I	247	37	19.98%
SD Merjosari II	248	74	29.84%
SD Merjosari IV (mountain)	77	50	64.94%

Source : The village office of Merjosari, Malang 1995.

Table 3 shows that even in the city centre of Malang (both of mountainous areas and non muontainous areas) actually IDD cases is still quite high. In this problems, we can make a conclusion that actually in general Malang Regency is a mountainous areas (both of its urban and its rural areas) and therefore its Iodine content in the soil is less. In addition to the above explanation, geographically, Malang regency and its surrounding areas including Kediri Regency, Blitar Regency, and Lumajang Regency are highland with rich in rainwater, and therefore Iodine content in its soil is quite low.

Table 4. WAZ, HAZ and WHZ of Underfive of Rural Areas by village

Village	n	WAZ mean + SD	HAZ mean + SD	WHZ mean + SD
T.Asri	39	- 1.33+1.02	-1.23+1.15	0.77+0.97
K.Sari	53	-1.14+1.35	-1.34+1.46	0.31+1.33
Total	92	-1.22+1.22	-1.30+1.33	-0.51+1.20
P-value	-	0.54	0.70	0.04.

Source : Sutomo, Adi Heru 1994.

Table 4 shows that generally in term of HAZ (height - Age Z-score), Tambak asri village is better than Karang Sari village, but in term of WAZ and WHZ Tambak asri village is worst.

In the context of statistical value, WHZ is the best ($P < 0.05$), it means that actually in term of WHZ (weight - Height Z-Score) Karang sari underfive children Nutritional status is better than Tambak Asri underfive children nutritional status.

Based on the data above, there is a conclusion that there is a trend where water availability is quite enough then IDD number is becoming less and the underfive children nutritional status is also becoming better than an area where water availability is less.

CONCLUSION

A conclusion that can be made based on this research above is that :

1. Underfive children nutritional status of Malang rural areas is quite low.
2. school children nutritional status of Malang urban area must be also low because of IDD they have.
3. There is a need to do an early detection and an early treatment of IDD, giving food supplementation (Iodine salt, sea fish, Iodine salt fish), and Public health education especially in the context of IDD in its relation to the environment, including water availability, rainwater, iodine availability and food habit.

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